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<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/038,860	ERNEST T. TSUI	
	Examiner	Art Unit	
	Erin M. File	2634	

**- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/9/2005.
2. ☒ The allowed claim(s) is/are 1-3, 5-13 and 15-20.
3. ☒ The drawings filed on 09 May 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date <u>05242005</u>.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Faustino A. Lichauco, Reg. No. 41,942 on 5/26/2005.

2. The application has been amended as follows:

**Claim 1**, A method comprising: estimating, on the basis of a constellation error in a received orthogonal frequency division multiplexed (OFDM) ~~OFDM~~ signal, an extent of an in-phase / quadrature (I/Q) ~~I/Q~~ imbalance error, caused by direct IQ conversion of said received OFDM signal; and on the basis of said extent, estimating an equalizing transformation that reduces said error, wherein estimating a transformation comprises evaluating an equalizer matrix.

**Claim 9**, A receiver comprising: an I/Q imbalance estimator for estimating, on the basis of a constellation error of a received orthogonal frequency division multiplexed (OFDM) ~~OFDM~~ signal, an in-phase / quadrature (I/Q) ~~I/Q~~ imbalance error, caused by direct conversion of said received signal; an adaptive filter system in communication with said

I/Q imbalance estimator for generating an equalizing transformation for reducing said I/Q imbalance error; and a weight-update block in communication with said adaptive filter system and said I/Q imbalance estimator, said weight-update block being configured to update weighting coefficients of said adaptive filter system on the basis of an error signal provided by said I/Q imbalance estimator.

**Claim 15,** An adaptive filter system comprising a first adaptive filter for generating a first transformation on the basis of a first portion of a received orthogonal frequency division multiplexed (OFDM) OFDM signal spectrum; and a second adaptive filter for generating a second transformation on the basis of a second portion of said spectrum; and a weight-update block in communication with each of said first and second adaptive filters, said weight-update block being configured to determine weighting coefficients for said first and second adaptive filters on the basis of an error signal.

**Claim 18,** A transmitter comprising: an in-phase / quadrature (I/Q) I/Q imbalance estimator for estimating, on the basis of a constellation error of an orthogonal frequency division multiplexed (OFDM) OFDM signal, an I/Q imbalance error, caused by direct conversion of said signal; and an adaptive filter system in communication with said I/Q imbalance estimator for generating an equalizing transformation for reducing said I/Q imbalance error; and a weight-update block in communication with each of said first and second adaptive filters, said weight-update block being configured to determine

weighting coefficients for said first and second adaptive filters on the basis of an error signal.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 9:30-6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin M. File



5/25/2005



STEPHEN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800